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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-96 (Cancel).

97. (Previously Presented) An isolated protein comprising the sequence of amino acids set forth in Fig. 1A, Fig. 6C, Fig. 6D, Fig. 20C, Fig. 20D, Fig. 26A, Fig. 28B, Fig. 29B, Fig. 30B, Fig. 31B, Fig. 32B, Fig. 33B, Fig. 34B, Fig. 35B, Fig. 36B, Fig. 37B, or Fig. 38B.

98. (Previously Presented) A nucleic acid comprising a nucleotide sequence that encodes the protein according to claim 97.

99. (Previously Presented) The nucleic acid according to claim 98 wherein the protein comprises the sequence of amino acids set forth in Fig. 26A, Fig. 28B, Fig. 29B, Fig. 30B, Fig. 31B, Fig. 32B, Fig. 33B, Fig. 34B, Fig. 35B, Fig. 36B, Fig. 37B, or Fig. 38B.

100. (Previously Presented) The nucleic acid according to claim 99 wherein said nucleic acid comprises the nucleotide sequence set forth in Fig. 26B, Fig. 28C, Fig. 29C, Fig. 30C, Fig. 31C, Fig. 32C, Fig. 33C, Fig. 34C, Fig. 35C, Fig. 36C, Fig. 37C, or Fig. 38C.

101. (Previously Presented) A nucleic acid comprising a nucleotide sequence encoding:

CON6 HIV gp160 protein,

subtype C ancestral HIV envelope protein,

subtype C consensus HIV envelope protein,

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subtype C consensus HIV gag protein,
subtype C consensus HIV nef protein,
Group M consensus HIV envelope protein,
subtype A consensus HIV envelope protein,
Group M consensus HIV gag protein,
Group M consensus HIV pol protein,
Group M consensus HIV nef protein,
subtype C consensus HIV pol protein,
subtype B consensus HIV gag protein, or
subtype B consensus HIV envelope protein

wherein said nucleotide sequence comprises codons optimized for expression in human cells.

102. (Previously Presented) The nucleic acid according to claim 101 wherein said nucleic acid comprises the nucleotide sequence set forth in Fig. 1D, Fig. 6A, Fig. 6B, Fig. 13E, Fig. 13F, Fig. 14B, Fig. 18B, Fig. 19A, Fig. 19B, Fig. 19C, Fig. 19D, Fig. 20A, or Fig. 20B.

103. (Previously Presented) An isolated protein comprising a CF or CFI form of the amino acid sequence set forth in any one of Figs. 39A-127A.

104. (Previously Presented) A nucleic acid comprising the nucleotide sequence set forth in any one of Figs. 39B-62B, Figs. 63B-84B, Fig. 65D, Fig. 67D, Fig. 68D, Figs. 85B-106B, Fig. 88D, Fig. 90D, Fig. 92D, Figs. 107B-127B, Fig. 109D, Fig. 111D and Fig. 112D.

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105. (Previously Presented) A vector comprising the nucleic acid according to any one of claims 98, 101 and 104.

106. (Previously Presented) A composition comprising at least one protein or nucleic acid according to any one of claims 97, 98, 101, 103 and 104 and a carrier.

107. (Previously Presented) A method of inducing an immune response in a mammal comprising administering to said mammal an amount of at least one protein and/or nucleic acid according to any one of claims 97, 98, 101, 103 and 104 sufficient to effect said induction.

108. (New) A nucleic acid comprising a codon-optimized nucleotide sequence that encodes the protein encoded by the nucleic acid sequence of Fig. 29C.

109. (New) A vector comprising the nucleic acid according to claim 108.

110. (New) A composition comprising the nucleic acid according to claim 108 and a carrier.

111. (New) A method of inducing an immune response in a mammal comprising administering to said mammal an amount of the nucleic acid according to claim 108 sufficient to effect said induction.

112. (New) A nucleic acid comprising the nucleotide sequence set forth in Fig. 29C.

113. (New) A vector comprising the nucleic acid according to claim 112.

114. (New) A composition comprising the nucleic acid according to claim 112 and a carrier.

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115. (New) A method of inducing an immune response in a mammal comprising administering to said mammal an amount of the nucleic acid according to claim 112 sufficient to effect said induction.